LISTING AND AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A linearly expandable router, comprising:

a first routing engine having input and output sides;

a second routing engine having input and output sides;

a third routing engine having input and output sides;

a first link, said first link coupling said input side of said first routing engine to said input side of said second routing engine;

a second link, said second link coupling said input side of said first routing engine to said input side of said third routing engine; and

a third link, said third link coupling said input side of said second routing engine to said input side of said third routing engine;

~~wherein said first, second and third routing engines are arranged in a fully connected topology~~

wherein data flows in to the input sides of the first, second, and third routing engines and data flows out from the output sides of the first, second, and third routing engines; and

wherein the linearly expandable router is expandable by adding an additional routing engine having an input and output sides and by linking the input side of the additional routing engine to the input sides of the first, second, and third routing engines.

2. (Previously presented) The apparatus of claim 1, wherein:

said first, second and third routing engines each have N inputs to said input side thereof and M outputs from said output side thereof; and

said linearly expandable router formed from said first, second and third routing engines having 3N inputs and 3M outputs.

3. (Previously presented) The apparatus of claim 2, wherein:

said first link providing said N inputs to said first routing engine to said input side of said second routing engine as a first N additional inputs thereto and providing said N inputs to said second routing engine to said input side of said first routing engine as a first N additional inputs thereto;

said second link providing said N inputs to said first routing engine to said input side of said third routing engine as a first N additional inputs thereto and providing said N inputs to said third routing engine to said input side of said first routing engine as a second N additional inputs thereto; and

said third link providing said N inputs to said second routing engine to said input side of said third routing engine as a second N additional inputs thereto and providing said N inputs to said third routing engine to said input side of said second routing engine as a second N additional inputs thereto.

4. (Currently amended) The apparatus of claim 1, and further comprising:

a fourth routing engine having input and output sides;

a fourth link, said fourth link coupling said input side of said first routing engine to said input side of said fourth routing engine;

a fifth link, said fifth link coupling said input side of said second routing engine to said input side of said fourth routing engine; and

a sixth link, said sixth link coupling said input side of said third routing engine to said input side of said fourth routing engine;

~~wherein said first, second, third and fourth routing engines are arranged in a fully connected topology~~.

5. (Previously presented) The apparatus of claim 4, wherein:

said first, second, third and fourth routing engines have N inputs to said input side and m outputs from said output side; and

said linearly expandable router formed from said first, second, third and fourth routing engines having 4N inputs and 4M outputs.

6. (Previously presented) The apparatus of claim 5, wherein:

said first link providing said N inputs to said first routing engine to said input side of said second routing engine as a first N additional inputs thereto and providing

said N inputs to said second routing engine to said input side of said first routing engine as a first N additional inputs thereto;

said second link providing said N inputs to said first routing engine to said input side of said third routing engine as a first N additional inputs thereto and providing said N inputs to said third routing engine to said input side of said first routing engine as a second N additional inputs thereto;

said third link providing said N inputs to said first routing engine to said input side of said fourth routing engine as a first N additional inputs thereto and providing said N inputs to said fourth routing engine to said input side of said first routing engine as a third N additional inputs thereto;

said fourth link proving said N inputs to said second routing engine to said input side of said third routing engine as a second N additional inputs thereto and providing said N inputs to said third routing engine to said input side of said second routing engine as a second N additional inputs thereto;

said fifth link proving said N inputs to said second routing engine to said input side of said fourth routing engine as a second N additional inputs thereto and providing said N inputs to said fourth routing engine to said input side of said second routing engine as a third N additional inputs thereto;

said sixth link proving said N inputs to said third routing engine to said input side of said fourth routing engine as a third N additional inputs thereto and providing said N inputs to said fourth routing engine to said input side of said third routing engine as a third N additional inputs thereto.

7. (Currently amended) A linearly expandable broadcast router, comprising:

at least three broadcast router components, each of said at least three broadcast router components is a discrete router having an input side and an output side and including a routing engine coupled between said input and output sides; and

means for coupling said at least three broadcast router components wherein said input side of each of said broadcast router component is connected, by a discrete link, to each and every one of the other said input sides of said broadcast router components

wherein data flows in to the input sides of the first, second, and third broadcast router components and data flows out from the output sides of the first, second, and third broadcast router components; and

wherein the linearly expandable router is expandable by adding an additional broadcast router component having an input and output sides and by linking the input side of the additional broadcast router component to the input sides of the first, second, and third broadcast router components.

8. (Previously presented) The apparatus of claim 7, wherein said input side of each of said at least three broadcast router components has N inputs and said output side of each of said at least three broadcast router components has M outputs.

9. (Previously presented) The apparatus of claim 8, wherein:

said coupling means further comprises means for coupling said N inputs for each one of said at least three broadcast router components to said routing engine for the other ones of said at least three broadcast router components.

10. (Currently amended) A method of constructing a linearly expandable broadcast router, comprising:

providing first, second and third routers, each having input and output sides and including a routing engine coupled between said input and output sides;

coupling, using a first discrete link, said input side of said first router to said input side of said second router;

coupling, using a second discrete link, said input side of said first router to said input side of said third router; and

coupling, using a third discrete link, said input side of said second router to said input side of said third router

wherein data flows in to the input sides of the first, second, and third routing engines and data flows out from the output sides of the first, second, and third routing engines; and

wherein the linearly expandable router is expandable by adding an additional routing engine having an input and output sides and by linking the input side of the

additional routing engine to the input sides of the first, second, and third routing engines.

11. (Previously presented) The method of claim 10, and further comprising:

providing a fourth router having input and output sides;

coupling, using a fourth discrete link, said input side of said first router to said input side of said fourth router;

coupling, using a fifth discrete link, said input side of said second router to said input side of said fourth router; and

coupling, using a sixth discrete link, said input side of said third router to said input side of said fourth router.